

BOUVERET'S SYNDROME: A CASE REPORT

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Abstract

Introduction:

Bouveret's syndrome is a gastric outlet obstruction caused by an impacted gallstone that enters the stomach through a cholecystogastric or cholecystoduodenal fistula.

Case Presentation:

A 66-year-old female patient presented one month prior to admission at our clinic with symptoms of nausea, vomiting, jaundice, and pain under the right costal arch. An abdominal ultrasound revealed aerobilia without dilation of intrahepatic bile ducts. An ERCP showed a significant amount of bile in the stomach and a rounded foreign object—a gallstone—inside the stomach. An unsuccessful attempt was made to extract the stone. While under general anesthesia, a gastroscopy revealed a large gallstone in the gastric antrum and a cholecystogastric fistula with significant bile leakage. Surgical treatment included cholecystectomy with partial gastric wall excision, stone extraction, and gastrostomy closure.

Discussion:

One-stage surgical treatment involves enterolithotomy, cholecystectomy, and fistula repair. Two-stage treatment is reserved for patients with unstable vital signs and typically involves endoscopic enterolithotomy followed by delayed cholecystectomy and fistula repair.

Keywords: Bouveret syndrome, biliary calculus, cholecystogastric fistula, cholelithiasis, gallbladder.

Introduction

The most common causes of gastric outlet obstruction include peptic ulcer disease, gastric cancer, and gastrointestinal tumors. Bouveret's syndrome is a rare gastric outlet obstruction caused by an impacted gallstone entering the stomach through a cholecystogastric or cholecystoduodenal fistula [1]. Cholecystogastric fistulas are rare and life-threatening complications of cholelithiasis, presenting a significant surgical challenge, especially in older patients with comorbidities. Biliary fistulas occur in 3–5% of patients with cholelithiasis, most commonly affecting the duodenum, followed by the stomach. Fistulization risk increases with gastrointestinal obstruction, usually in the terminal ileum or at the ileocecal valve[2]. Despite being well-documented in the literature, there is ongoing debate about the optimal surgical treatment for this complex problem [3,4,5].

Case Presentation

A 66-year-old female patient presented to an internal emergency department with nausea, vomiting, jaundice, and pain under the right costal arch. Laboratory results showed elevated inflammatory markers (Leukocytes: 13.2) and bilirubin levels (Total Bilirubin: 108 µmol/L, Direct Bilirubin: 76 µmol/L), consistent with obstructive jaundice. She was referred to the Clinic for Gastroenterology, where abdominal ultrasound revealed aerobilia without intrahepatic bile duct dilation. ERCP showed a large amount of bile in the stomach and a rounded foreign body—a gallstone. Three separate attempts to extract the stone via ERCP were unsuccessful. Meanwhile, spontaneous resolution of jaundice occurred, likely due to spontaneous passage of smaller gallstones.

The patient was admitted to the Digestive Surgery Clinic for surgical removal of the gallbladder and the gastric stone. Upon admission, she had stable vital signs and normal laboratory values. While under general endotracheal anesthesia, gastroscopy confirmed a large gallstone in the gastric antrum and a cholecystogastric fistula with significant bile leakage. Surgical exploration revealed a sclerosed, atrophic gallbladder with adhesions to the stomach. Cholecystectomy with partial gastric wall excision, stone extraction, and closure of the gastric wall (gastrostomy) were performed.

Postoperatively, the patient began clear fluids on the 4th day and light meals on the 6th day. The abdominal drain was removed on the 7th postoperative day. She remained stable with normal vital signs and laboratory values throughout her recovery. Histopathological analysis showed a sclerosed, atrophic gallbladder without signs of malignancy.

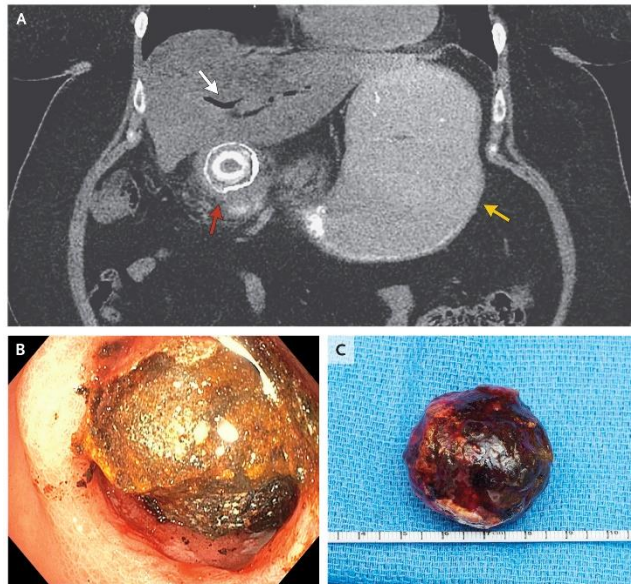


Figure A. CT finding of a cholecysto-gastric fistula with a large stone.

Figure B. Gastroscopic finding of a calculus in the stomach.

Figure C. The removed calculus from the stomach

Discussion

In 1896, Bouveret described two patients with gastric outlet obstruction caused by impacted biliary stones [6]. Chronic inflammation of the gallbladder leads to erosion and necrosis of the gallbladder wall, forming a biliary-enteric fistula. Various fistula types include cholecystogastric, cholecystoduodenal, and others. These fistulas are twice as common in women compared to men [7,8,9].

Symptoms of Bouveret's syndrome are non-specific, including nausea, vomiting, abdominal pain, abdominal distension, and occasionally hematemesis, weight loss, or melena [10].

Radiological findings such as pneumobilia, a calcified mass, or dilated bowel loops with air-fluid levels are common on plain abdominal X-rays [11]. Ultrasonography may detect cholecystoduodenal fistulas, though gas and fluid often obscure the view. Abdominal CT can help diagnose pneumobilia, biliary fistulas, and dilated bowel loops [12].

Conclusion

Treatment modalities include one-stage or two-stage surgical approaches. One-stage treatment involves enterolithotomy, cholecystectomy, and fistula repair, while two-stage treatment is reserved for unstable patients and consists of endoscopic enterolithotomy followed by delayed cholecystectomy and fistula repair.

Chronic gallbladder inflammation with a biliary-enteric fistula may lead to malignant transformation. However, in our case, histopathology confirmed no signs of malignancy.

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